

Remarks

Claims 1-20 are pending.

Claims 1-20 stand rejected.

Claims 1-20 are submitted herein for further reconsideration.

Claim 1 has been amended. No new matter has been added.

Applicant respectfully submits the following for Examiner's reconsideration.

Examiner asserts that Culver discloses a consumption indicator formed of a rotating disc provided with an active sector and optical elements of emitting type and receiving type opposite said disc, wherein the received optical signal is processed to infer at least the number of rotations of said disc. As such, Examiner claims that Culver anticipates the present invention.

Applicant respectfully disagrees with Examiner's anticipation claim.

The present invention as claimed in independent claim 1 is directed to an optical detector device for a meter having a consumption indicator formed of a rotating disc provided with a so-called active sector and optical elements of emitting type and receiving type opposite one planar face of the disc. The received optical signal at the receiving type optical element is processed to infer at least the number of rotations of the disc. The optical detector has at least two said optical elements of one type and at least one said optical element of the other type. The active sector is one reflecting sector of the planar face with a center angle called a first angle ( $\gamma$ ) of between about 45 and 225°, and the two optical elements of one type are emitting elements of light beam, the lines

connecting each trace of these beams on disc forming a center angle in the center of the disc called a nonzero second angle ( $\alpha$ ).

One purpose of the present invention is to provide an optical detector device able to determine the direction of flow of the water or other fluids and hence the direction of rotation of the indicating disc, taking into account consumption which can be termed negative, as well as normal positive fluid consumption. The lines connecting the traces of the beams to the center of the disc form a center angle called a second nonzero angle  $\alpha$ . Angle  $\alpha$ , as illustrated in Fig. 8 of the application is the angle from one marking on the reflecting sector to the next marking, which aids in determining the direction of rotation.

Such an arrangement in the present invention with the active sector of the present invention on the planar face of the rotating disc, is a characteristic designed especially for application to a fluid meter and as such is novel.

The cited prior art, namely Culver teaches an emitter that is positioned to direct electromagnetic energy, such as infrared or visible light, to the *side of* the code wheel, tangential to the plane of rotation, where a pattern is located. Culver aims at allowing an encoder to be used in very slim and compact device designs. The wheel in Culver is a cylinder that is rotatable about an axis A and includes on its cylindrical side, i.e. on the edge, a regular coded pattern where one type of mark is able to reflect emitted light and the other type of mark absorbs it or reflects to a lesser degree.

As such, Applicant respectfully submits that the cited prior art does not teach or suggest all of the elements of the present invention as claimed. For example, there is no teaching or suggestion in the Culver reference that discloses that the active sector is one reflecting sector of the planar face with a center angle called a first angle ( $\gamma$ ) of between

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about 45 and 225°. Furthermore, there is no teaching, motivation or need in Culver of a center angle in the *center of the disc called nonzero second angle (a)*.

There is a clear difference between the light beams in Culver which are emitted toward the side of the wheel, tangential to the axis of rotation and the light beams of the present invention which are emitted toward the planar face of the disc within the disc's plane of rotation.

Applicant respectfully submits that the cited prior art does not teach or suggest all of the elements as claimed in claim 1, and respectfully requests that the rejection of this claim be withdrawn. Likewise, as claims 2-20 depend from claim 1, these claims should be allowed for at least the same reason.

In view of the foregoing, Applicant respectfully submits that the pending claims 1-20 are in condition for allowance, the earliest possible notice of which is earnestly solicited. If the Examiner feels that an interview would facilitate the prosecution of this Application they are invited to contact the undersigned at the number listed below.

Respectfully Submitted,

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